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WENDEROTH, LIND & PONACK, L.L.P.
2033 K STREET N. W.
SUITE 800
WASHINGTON, DC 20006-1021

EXAMINER

HOGABOAM, ROMNEY J

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4134

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/575,357	Applicant(s) MASUYAMA ET AL.	
	Examiner Romney J. Hogaboam	Art Unit 4134	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) <input type="checkbox"/> Other: _____ |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :11 April 2006, 19 May 2006, 05 Spetember 2008.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statements (IDS) submitted on 11 April 2006, 19 May 2006, and 05 September 2008 were filed on or after the mailing date of the application on 11 April 2006. The submissions are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements are being considered by the examiner.

Specification Objections

2. The disclosure is objected to because the applicant fails to adequately set forth the structure, material or acts the performed claim functions.

3. The claim limitation of an "input means" is a means plus function limitation that invokes 35 U.S.C. 112, sixth paragraph. The written description only implicitly or inherently sets forth the corresponding structure, material, or acts that perform the claimed function.

4. The claim limitation of an "appearance frequency calculation means" is a means plus function limitation that invokes 35 U.S.C. 112, sixth paragraph. The written description only implicitly or inherently sets forth the corresponding structure, material, or acts that perform the claimed function.

5. The claim limitation of a "reference point setting means" is a means plus function limitation that invokes 35 U.S.C. 112, sixth paragraph. The written description only

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implicitly or inherently sets forth the corresponding structure, material, or acts that perform the claimed function.

6. The claim limitation of a "central point calculation means" is a means plus function claim that invokes 35 U.S.C. 112, sixth paragraph. The written description only implicitly or inherently sets forth the corresponding structure, material, or acts that perform the claimed function.

7. Appropriate correction is required.

Claim Objections

8. A series of singular dependent claims is permissible in which a dependent claim refers to a preceding claim which, in turn, refers to another preceding claim.

9. A claim which depends from a dependent claim should not be separated by any claim which does not also depend from said dependent claim. It should be kept in mind that a dependent claim may refer to any preceding independent claim. In general, applicant's sequence will not be changed. See MPEP § 608.01(n).

Claim Rejections - 35 USC § 112

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting an essential element, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted element is the direction of the vector. A

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vector is distinguished from a scalar in that a vector has both magnitude and direction while a scalar has only magnitude. The applicant claims a vector having only magnitude, a function value.

12. Claims 16 and 43 are rejected under 35 U.S.C. 112 sixth paragraph for insufficient disclosure to perform the function recited in the claims. The claimed element of a means for “updating a prescribed number of times” is a means (or step) plus function limitation that invokes 35 U.S.C. 112, sixth paragraph. However, the written description fails to clearly link or associate the disclosed structure, material, or acts to the claimed function such that one of ordinary skill in the art would recognize what structure, material, or acts perform the claimed function.

13. The applicant is required to:

(a) Amend the claim so that the claim limitation will no longer be a means (or step) plus function limitation under 35 U.S.C. 112, sixth paragraph; or

(b) Amend the written description of the specification such that it clearly links or associates the corresponding structure, material, or acts to the claimed function without introducing any new matter (35 U.S.C. 132(a)); or

(c) State on the record where the corresponding structure, material, or acts are set forth in the written description of the specification that perform the claimed function.

For more information, see 37 CFR 1.75(d) and MPEP 2181 and 608.01(0).

14. Claims 21-23 are rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either an asserted utility or a well

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established utility, one skilled in the art clearly would not know how to use the claimed invention.

Claim Rejections - 35 USC § 101

15. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

16. Claims 19, 20 and 28 are directed to non-statutory subject matter.

17. Regarding claims 19, 20, and 28 these claims cites a "program for causing a computer to execute" certain steps.

18. The Applicants' specification fails to give a specific definition to the term "program", but does disclose that the program may be "transmitted and received via a network" (specification paragraph 31).

19. Any claim whose limitations are either explicitly claimed as being implemented in software, or could be reasonably interpreted as being implemented in software, must be claimed in combination with an appropriate medium to establish a statutory category of invention and enable any functionality to be realized in order for the claimed subject matter to be statutory under the provisions of 35 U.S.C. § 101.

20. The Applicants' above-cited lack of a definite disclosure regarding the nature of the claimed computer program product renders the claims non-statutory, since it leaves open the possibility that the Applicants intend the term "computer program product" to be interpreted as including printed paper, transmission media, signals, or other forms of energy. Such an interpretation would render the claims non-statutory under the

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provisions of 35 U.S.C. § 101. "A transitory, propagating signal...is not a "process, machine, manufacture, or composition of matter."...thus such a signal cannot be patentable subject matter." In re Nuijten, 500 F3d 1346, 84 USPQ2d 1495 (CAFC), 20 September 2007.

21. Claims 21-23 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows.

22. The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

Nonfunctional descriptive material that does not constitute a statutory process, machine, manufacture or composition of matter and should be rejected under 35 U.S.C. Sec. 101. Certain types of descriptive material, such as music, literature, art, photographs and mere arrangements or compilations of facts or data, without any functional interrelationship is not a process, machine, manufacture or composition of matter. USPTO personnel should be prudent in applying the foregoing guidance. Nonfunctional descriptive material may be claimed in combination with other functional descriptive multi-media material on a computer-readable medium to provide the necessary functional and structural interrelationship to satisfy the requirements of 35 U.S.C. Sec. 101. The presence of the claimed nonfunctional descriptive material is not necessarily determinative of nonstatutory subject matter. For example, a computer that recognizes a particular grouping of musical notes read from memory and upon recognizing that particular sequence, causes another defined series of notes to be played, defines a functional interrelationship among that data and the computing processes performed when utilizing that data, and as such is statutory because it implements a statutory process.

23. Claims 21-23 recite a "character representative diagram" which does not impart functionality to a computer or computing device, and is thus considered nonfunctional descriptive material. Such nonfunctional descriptive material, in the absence of a functional interrelationship with a computer, does not constitute a statutory process, machine, manufacture or composition of matter and is thus non-statutory per se.

Claim Rejections - 35 USC § 102

24. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

25. Claim 21 is rejected under 35 U.S.C. 102(b) as being unpatentable over Naoya Moriya, et al., "Shinkyu Gakushu Shido Yoryo ni okeru Yogo Shutsugen ni Kansuru Kento", Shingaku Giho, 14 December, 1999, pages 61 to 68.

26. Moriya teaches a diagram where a function value of the appearance frequency of terms in one document or document group is displayed on a first axis (x-axis) and a function value of the appearance frequency of the term in a second document or document group is displayed on a second axis (y-axis) (Moriya, page 64, fig. 2).

27. Claims 22 and 23 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Calistri-Yeh et al. (US printed publication 2004/0199546).

28. Regarding claim 22, Calistri-Yeh teaches returning terms based on their relative frequency in groups of documents. Calistri-Yeh teaches index term(W3) of a first group (C4) having a low appearance frequency in documents-to-be-compared(X Category 1) to be compared with said document-to-be-surveyed(Y Category 2) and in similar documents (also Y Category 2) that are similar to said document-to-be-surveyed is

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disposed in a first area (C4), an index term (W11) of a second group (C2) having a higher appearance frequency in said documents-to-be-compared (X Category 1) in comparison to the index term of said first group (C4) is disposed in a second area (C2), and an index term(W10) of a third group (C3) having a higher appearance frequency in said similar documents (Y Category 2) in comparison to the index term (W3) of said first group (C4) is disposed in a third area (C3) (See fig. 11, paragraphs 107, 112).

29. Regarding claim 23, Calistri-Yeh teaches returning terms based on their relative frequency in groups of documents. Calistri-Yeh teaches an index term (W3) of a third group (C4) having a lower appearance frequency in documents-to- be-compared (X Category 1) to be compared with said document-to-be-surveyed (Y Category 2) in comparison to an index term of a fourth group (C3) having a high appearance frequency in said documents-to-be-compared compared and in similar documents (also X Category 1) that are similar to said document-to-be-surveyed (Y Category 2) is disposed in a third area (C4), an index term of a second group (C2) having a lower appearance frequency in said similar documents (Y Category 2) in comparison to the index term (W7) of said fourth group (C3) is disposed in a second area (C2), and an index term (W1) of a first group (C1) having a lower appearance frequency in said similar documents (Y Category 2) in comparison to the index term (W3) of said third group (C4) and further having a lower appearance frequency in said documents-to-be-compared (X Category 1) in comparison to the index term (W12) of said second group (C4) is disposed in a first area (C4) (see fig. 11, paragraphs 107, 112).

Claim Rejections - 35 USC § 103

30. Claims 1, 2, 4-7, 9, 10, 17-20, 24-28, and 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masserly et al. (US patent 6,076,051), Van Den Tillaart et al. (US printed publication 2003/0221160), and Calistri-Yeh et al. (US printed publication 2004/01995446).

31. The applicant claims an index term extraction means. The applicant defines an “index term extraction means” on page 16 as clipping words via conventional methods or with commercially available morphological analysis software or retaining an index term dictionary database in advance and using index terms adopted from that database. The applicant also claims a similar documents selecting means. The applicant defines a similar documents selecting means on page 53 as sorting the documents from highest similarity and selecting a required number indicated in the conditions. The applicant finally claims an output means for outputting each index term. The applicant defines the output means on page 20 as taking the function value of the appearance frequency in the documents-to-be-compared as a first axis of a coordinate system and taking the function value of the appearance frequency in the similar documents as a second axis of the coordinate system.

32. Regarding claims 1 and 9, Messerly teaches a similar document selecting means or step for selecting similar documents from an existing collection based on semantic similarity (column 5, lines 34-53). Messerly also teaches a means for calculating the appearance frequency of terms in similar documents (Figure 3, item 302; column 5, lines 31-39). Masserly finally teaches an input means (figure 2, item 220). Masserly

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does not disclose a text extraction unit, determining the appearance frequency of words in an input document, or graphically outputting index term appearance frequency.

33. Van Den Tillaart teaches a text extraction unit that receives a document and converts the documents to a set of words (paragraph 25). Van Den Tillaart also teaches determining the appearance frequency of words in an input document (paragraphs 9 and 24).

34. Van Den Tillaart does not disclose graphically outputting index term appearance frequency.

35. Calistri-Yeh discloses an output means wherein the appearance frequency of words in the comparison document is plotted on one axis and the appearance frequency of words in similar documents is plotted on a second axis (see Fig. 11 and 16, paragraphs 107, 112, and 121).

36. Regarding the first and second appearance frequency calculation means, see the specification objections above.

37. Claim 9 is rejected on the same basis as claim 1 as it has identical scope. Claim 9 incorporates the definition of output means provided in the specification and attempts to use it to further limit claim 1. As a means claim, that definition is already incorporated.

38. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Messerly with the teachings of Van Den Tillaart and Calistri-Yeh in order to present semantic representation of information contained in a document in relation to an existing set of documents (see Calistri-Yeh, paragraph 11).

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39. Regarding claim 17, the applicant claims a method for using the device in claim 1; see claim 1 above.

40. Regarding claim 2, Messerly teaches searching a set of documents without regard to their designation as documents to be searched or source-documents-for-selection.

41. Regarding claim 19, the applicant claims a method of using the device of claim 2; see the discussion of claim 2 above.

42. Regarding claim 4, Calistri-Yeh teaches outputting index terms in a plurality of groups (Figs. 8-11; paragraph 112). Calistri-Yeh teaches three groups (e.g. C1, C2, and C3) terms with low frequency in the compared and similar documents, terms more frequent in compared documents than in similar documents (e.g. C3), and terms with high frequency in compared and similar documents (e.g. C4).

43. Regarding claim 5, the applicant adds an additional group. See claim 4 above.

44. Regarding claim 6, the applicant replaces the output means of a list with the terms from particular groups as in claim 4 and omits the similar document selecting means from claim 1. Regarding the grouping element, see claim 4 above. Regarding all other elements, see claim 1 above. Calistri-Yeh teaches an index term (e.g. any of W1-W12) of a first group (e.g. either of C1 or C2) having a low appearance frequency in said documents-to-be-compared and in said similar documents, an index term of a second group (e.g. C4) having a higher appearance frequency in said documents-to-be-compared in comparison to the index term of said first group (any term in C1 or C2), and an index term of a third group having a higher appearance frequency (any term in

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C3) in said similar documents in comparison to the index term of said first group (C1, C2) (see Fig. 11).

45. Regarding claims 7 and 33, the applicant replaces the output means of a list with the terms from particular groups as in claim 5 and omits the similar document selecting means from claim 1. Regarding the grouping element, see claim 5 above. Regarding all other elements, see claim 1 above. Calistri-Yeh teaches an index term (W1-W12) of a third group (e.g. C3) having a lower appearance frequency in said documents-to-be-compared in comparison to an index term of a fourth group(e.g. C4) having a high appearance frequency in said documents-to-be-compared and in said similar documents; an index term of a second group (e.g. C2) having a lower appearance frequency in said similar documents in comparison to the index term of said fourth group(C4), and an index term of a first group (e.g. C1) having a lower appearance frequency in said similar documents in comparison to the index term of said third group and further having a lower appearance frequency in said documents-to-be-compared in comparison to the index term of said second group (e.g. C2) (see fig. 11).

46. Claim 33 is rejected on the same basis as claim 7 as it has identical scope. Claim 33 incorporates the definition of output means provided in the specification and attempts to use it to further limit claim 7. As a means claim, that definition is already incorporated.

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47. Regarding claims 18 and 20, the applicant claims the method of using the device of claim 6; see the discussion of claim 6 above.

48. Regarding claim 24, the applicant claims the device of claim 6 with the substitution of claim 2, calculating and outputting central points rather than the entire data sets. Calistri-Yeh teaches calculating and outputting a central point of a term group (fig. 11, 13; paragraph 114). See claims 2 and 6 for the remaining elements.

49. Regarding claim 25, Calistri-Yeh also teaches scaling the central point based on the occurrence frequency of a term in a set of documents (paragraph 121).

50. Regarding claim 26, Calistri-Yeh does not teach extracting documents with high or low similarity from a group of documents. Messerly teaches extracting documents with high or low similarity from a group of documents (column 5, lines 34-53). Claim 26 depends on claim 24 and claim 24 is rejected by Masserly et al. Van Den Tillaart et al. (US printed publication 2003/0221160), and Calistri-Yeh et al. (US printed publication 2004/01995446).

51. Regarding claim 27, the applicant claims the method of claim 24; see the discussion of claim 24 above.

52. Regarding claim 28, the applicant claims a program that performs the same function as that of the device in claim 24; see claim 24 above. Calistri-Yeh teaches calculating and outputting a central point of a term group (fig. 11, 13, and 16; paragraph 114). See claims 2, and 6 for the remaining elements.

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53. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Calistri-Yeh with the teaching of Messerly in order to present a semantic representation of information contained in a document in relation to an existing set of documents (see Calistri-Yeh, paragraph 11).

54. Regarding claim 10, the applicant claims the index term device of claim 6 wherein the output means is a list of terms from different groups. Messerly discloses as prior art returning semantic query results as a list (column 1, lines 56-61).

55. Regarding claim 32, the applicant claims the device of claim 6 with a graphical output as described in claim 9; see claims 6 and 9 above.

56. Regarding claim 34, the applicant claims the device of claim 7 with a graphical output as described in claim 9; see claims 7 and 9 above.

57. Claims 8, 12, 13, 30, 31, 36, 37, 44 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masserly, Van Den Tillaart, and Calistri-Yeh as applied to claim 1 above, and further in view of Tokuda et al. (US printed publication 2003/0050921).

58. Regarding claim 8, none of Masserly, Van Den Tillaart, nor Calistri-Yeh teaches weighing the function value of the term appearance frequency in documents with a logarithm of the number of documents multiplied by the reciprocal of the appearance frequency.

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59. Tokuda teaches weighing frequency function values various ways including using a logarithm of occurrence count (paragraph 25). It also teaches using in that function the number of documents in the collection (paragraph 27).

60. It would have been obvious to modify Messerly, as modified by Van Den Tillaart and Calistri-Yeh, with the teaching of Tokuda in order to normalize vectors (see Messerly, paragraph 29).

61. Regarding claim 30, the applicant claims the device of claim 6 wherein the function is the function of claim 8; see claims 6 and 8 above.

62. Regarding claim 31, the applicant claims the device of claim 7 wherein the function is the function of claim 8; see claims 7 and 8 above.

63. Regarding claim 12, the applicant claims the device of claim 1 including similar documents in the documents-to-be-compared and the appearance frequency is transformed such that a boundary line of an existable are of the terms approaches the vertical axis.

64. Tokuda teaches a transform (discussed as normalization) that adjusts the location, and therefore the boundary line around, index terms such that that boundary line approaches a vertical line of the first axis (paragraph 27, lines 6 and 7).

65. Regarding claim 13, the applicant claims the device according claim 12 wherein the transformation is performed based on the appearance frequency in similar documents; see claim 12 above.

66. Regarding claims 36 and 37, the applicant claims the device of claim 6 wherein the output is transformed as in claim 12 along both axes; see claim 12 above.

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67. Regarding claims 44 and 45, the applicant claims the devices of claims 36 and 37 respectively wherein the appearance frequency in similar documents is used in the function; see claim 12 above.

68. Claims 11, 35, 46, and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masserly, Van Den Tillaart, and Calistri-Yeh as applied to claim 6 above, and further in view of Garrecht et al. (US patent 6,571,249).

69. In claims 11, 35, 46, and 47 the applicant claims the device of claims 4-7 wherein the output means automatically creates and outputs supporting documentation. In the specification on page 21, the applicant defines the supporting documentation as, for instance, “a document in the technical field relating to **, ** (index terms of third group), by using the specialized concept and technology relating to **, ** (index terms of the first group), and focusing on the perspective of **, ** (index terms of the second group)”.

70. None of Masserly, Van Den Tillaart, nor Calistri-Yeh teaches automatically creating and outputting documentation explaining the relevance of the semantic search results. Garrecht teaches outputting a category (level 1), a specialized concept (a material in level 2), and a perspective (a usage in level 3) (fig. 6; column 9, lines 34-45).

71. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Messerly, as modified by Van Den Tillaart and Calistri-Yeh, with the teaching of Garrecht in order to structure complex results (see Garrecht, column 5, lines 25-40).

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72. Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masserly, Van Den Tillaart, Calistri-Yeh, and Tokuda as applied to claim 8 above, and further in view of Garrecht.

73. In claim 48 the applicant claims the device of claim 8 wherein the output means automatically creates and outputs supporting documentation. In the specification on page 21, the applicant defines the supporting documentation as, for instance, “a document in the technical field relating to **, ** (index terms of third group), by using the specialized concept and technology relating to **, ** (index terms of the first group), and focusing on the perspective of **, ** (index terms of the second group)”.

74. None of Masserly, Van Den Tillaart, Calistri-Yeh, nor Tokuda teaches automatically creating and outputting documentation explaining the relevance of the semantic search results. Garrecht teaches outputting a category (level 1), a specialized concept (a material in level 2), and a perspective (a usage in level 3) (fig. 6; column 9, lines 34-45).

75. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Messerly, as modified by Van Den Tillaart and Calistri-Yeh, with the teaching of Garrecht in order to structure complex results (see Garrecht, column 5, lines 25-40).

76. Claims 14, 38, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masserly, Van Den Tillaart, and Calistri-Yeh, and further in view of Henderson et al. (US patent 5,544,049).

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77. Regarding claim 14, none of Masserly (though counting is arguably inherent in computing the frequency), Van Den Tillaart, nor Calistri-Yeh teach counting the occurrence of index terms in the documents to be surveyed or outputting the occurrence count of terms in the documents-to-be-surveyed. Henderson teaches calculating the occurrence count of terms in documents-to-be-surveyed (fig. 2, items 20-23; column 4, lines 12-22) and outputting the occurrence count of a term in the document-to-be-surveyed (fig 2, item 31; column 4, lines 39-45).

78. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Messerly, as modified by Van Den Tillaart and Calistri-Yeh, with the teaching of Henderson in order to perform a similarity search on a large collection of documents (see Henderson column 2, lines 21-25).

79. Regarding claim 38, the applicant claims the device of claim 6 with the frequency calculation of claim 14; see claims 6 and 14 above.

80. Regarding claim 39, the applicant claims the device of claim 7 with the frequency calculation of claim 14; see claims 7 and 14 above.

81. Claims 15, and 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masserly, Van Den Tillaart, and Calistri-Yeh as applied to claim 1 above, and further in view of Imaichi et al. (US printed publication 2003/0220916).

82. Regarding claim 15, none of Masserly, Van Den Tillaart, nor Calistri-Yeh teach outputting index terms as reference points on a coordinate system wherein the appearance frequency in the documents-to-be-compared is plotted on one axis and the appearance frequency in similar documents is plotted on the other axis. Imaichi

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teaches outputting index terms as reference points on a coordinate system wherein the appearance frequency in one document group is plotted on one axis and the appearance frequency in another document group is plotted on the other axis (fig. 3, paragraph 44).

83. Regarding claim 40, the applicant the device of claim 6 with the output means of claim 15; see claims 6 and 15 above.

84. Regarding claim 41, the applicant the device of claim 7 with the output means of claim 15; see claims 7 and 15 above.

85. Claim 42 is rejected on the same basis as claim 40 as it has identical scope. Claim 42 incorporates the definition of output means provided in the specification and attempts to use it to further limit claim 6. As a means claim, that definition is already incorporated.

86. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Messerly, as modified by Van Den Tillaart and Calistri-Yeh, with the teaching of Imaichi in order to display the similarity of documents (see Imaichi paragraphs 8 and 9).

87. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Imaichi in view of Calistri-Yeh.

See the discussion of Imaichi and Calistri-Yeh on claims 1 and 25 above.

Imachi does not teach calculating a central point; neither does it teach a function value based on index term appearance frequency. Calistri-Yeh teaches calculating a

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central point (paragraph 114) and scaling coordinates using a function value based on index term appearance frequency (paragraph 121).

88. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Imaichi with the teaching of Calistri-Yeh in order to present semantic representation of information contained in a document in relation to an existing set of documents (see Calistri-Yeh, paragraph 11).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Romney J. Hogaboam whose telephone number is (571) 270-7352. The examiner can normally be reached on Monday through Friday, 7:30 am - 5:00 pm, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, LUN-YI LAO can be reached on (571) 272-7671. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Romney J Hogaboam/
Examiner, Art Unit 4134

/LUN-YI LAO/
Supervisory Patent Examiner, Art Unit 4134